

BLM Utah RAC Subgroup Report on Fire Rehabilitation

12/14/2000 Kirk Halford

Search of the internet for information on fire effects AND archeology:

2 items

1.) <http://www.ut.blm.gov/rehabsub.html#5> - Cultural

BLM Utah - Fire Rehabilitation Program

RAC Subgroup Report on Fire Rehabilitation
by
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PREAMBLE

In the last five years, as a result of wildfires, there has been a dramatic increase in the number of acres burned in Utah. On lands administered by the Bureau of Land Management (BLM) wildfires increased from 4,549 acres in 1991, to 308, 457 acres in 1996 (BLM Facts & Figures for Utah). The 1996 fires resulted in the loss of perennial vegetation over large areas of arid and semi-arid ecosystems in Utah.

This increase is the result of several factors including low precipitation, extremely low vegetation fuel moisture, past policies of controlling all wildfires, the lack of perennial vegetation, and the invasion of cheatgrass and other introduced annual weedy species that are highly flammable.

Rehabilitation of these lands became a public issue when various groups disagreed on whether treatment methods disturbed cultural resource values or the burned site required treatment. Several issues were discussed with the Resource Advisory Council (RAC), who then decided to form a Subgroup to look into the matter. The following issues were considered by the Subgroup.

Issue #1 - Vegetative Rehabilitation and Management of a Burned Area

Issue #2 - Knowledge and Experience

Issue #3 - Methodology

Issue #4 - Native Verses Non-native Seed

Issue #5 - Cultural Resource Inventories

Issue #6 - Cultural Resource Significance

Issue #7 - Native American Coordination and Consultation

Issue #8 - Treatment of Cultural Resources

ISSUE #1 - Vegetative Rehabilitation and Management of a Burned Area

Is it better to seed the area or to allow it to recover naturally through the successional process?

Since fire is a natural phenomenon and component of ecosystems, the first questions considered by the RAC Subgroup were "When considering soil, water, plant and animal resources, should burned areas be allowed to respond naturally or is fire rehabilitation justified? Has the invasion of cheatgrass and other non-native species altered the recovery process?"

ANALYSIS

Utah and other areas of the West have a diversity of ecosystems that respond differently to burning. Some ecosystems require fire for their maintenance (i.e. chaparral) and others may be very sensitive to burning. How ecosystems respond is determined by when the fire occurs (spring, mid-summer, fall), the intensity of the fire (which is dependent upon fuel loads, relative humidity, wind, air temperature), and the composition of the existing plant community, including weeds, at the time of the fire.

How areas recover from burning is largely dependent upon what native or naturalized plant community is in place at the time the fire occurs. If a sufficient understory of perennial grasses, forbs and shrubs is present prior to burning then the plant communities normally recover without reseedling. However, in many situations the herbaceous or shrub communities have been removed by competition from pinyon-juniper communities (P-J) or sagebrush encroachment, overgrazing by livestock and big game, weed infestations, or climatic changes. Under these conditions sufficient native plants are not present to protect the site, or facilitate secondary successional recovery processes and will require seeding of desired species. Fire may be used in such areas as an opportunity to reestablish natural diversity.

Soil, Water, Vegetation

The overriding concern of fire rehabilitation is to conserve the soil and maintain the site. It is well recognized that management goals must be designed to protect the three basic resources of soil, water and vegetation. It is also generally accepted that it requires centuries or millennia to develop an inch of topsoil in arid regions. In addition, recovery of native communities may also require extended periods of time to fully develop. Invasion of weeds can greatly inhibit this process and alter the eventual composition over extensive areas.

Annual plants grow erratically from year to year and are less capable of protecting the soil, throughout the year. Lack of suitable and stable plant cover results in increased rates of wind and water erosion, and a depletion of soil microflora and fauna that are prerequisite to healthy soils and plants. Adapted perennials, with more diverse rooting capabilities, are better able to stabilize soils, retard the frequency and intensity of fire, compete with undesirable species and continue the soil building process. Seedlings, consisting of perennial grasses and shrubs, provide a more stable and effective cover than annual weeds. In addition, these seedlings restrict weed invasion, and reduce the incidence and size of fires.

Weed Invasion

Weed suppression and control is now a national issue and is receiving attention from the highest levels of government down to the county, city, and individual land owner levels. In many P-J

sites the exotic or introduced alien cheatgrass is the pioneer species that occupies the site. In many situations, this plant and other weeds have invaded P-J sites prior to burning. As these weed infested sites burn, the weeds flourish and become more dominant. Cheatgrass is a particularly aggressive winter annual that quickly dominates new disturbances and effectively out-competes seedlings of native species. Consequently natural succession or recovery is delayed, significantly altered, or stopped.

Cheatgrass is also extremely flammable and it considerably alters the intensity and frequency of fires. Fire frequency was originally on the order of every 70 to 100 years or longer. Once these sites are occupied by cheatgrass, fire frequency has changed to every 3-5 years, or at least to more frequent intervals. In addition to increasing fire frequency, cheatgrass has also had an affect on the number of acres consumed by fire. Large contiguous areas are now dominated by this highly flammable weed. When a fire starts on a dry cheatgrass site, the area is quickly consumed. The spread of the fire is rapid and the burned area becomes extensive. If these burned areas are not treated, cheatgrass and other weeds will invade as well, ever expanding their domination of the landscape. Cheatgrass monocultures are now established in extensive portions of the Great Basin, Snake River Plains, Northern & Central Nevada, and the Pacific Northwest. Other exotic annual grasses occupy areas throughout the southwest, including southern Utah, southern Nevada and southern California.

Sites dominated by cheatgrass may have crossed a threshold and succession may not proceed toward the original community or succession will be very slow. This situation that mandates reseeding with adapted species to stabilize the site, prevent soil erosion and prevent the establishment of cheatgrass and other weeds.

On cheatgrass dominated sites there is a much greater opportunity for other secondary weed species to invade and contribute to the degradation of the site. These weed species include, but are not limited to, the Knapweeds (several species), annual mustards (several genera), Medusa-head rye and other annual grasses, scotch, musk and other thistles, skeleton weed, and tumble weed. These species can gain a foothold on cheatgrass sites and eradication becomes extremely difficult or impossible.

Weed invasion can best be prevented or slowed by the reestablishment of perennial communities. Seeding of adapted and desired perennials is most important, but weed control may also be a necessary adjunct to seeding.

Healthy plant communities must maintain their resistance to and resilience from uses and disturbances such as grazing, fire, drought, insects, etc. Plant communities that become dominated by annuals such as cheatgrass lose that ability. When this occurs, range sites are no longer capable of producing diverse plant and animal populations.

SUBGROUP RECOMMENDATIONS

The main objective of fire rehabilitation must be the protection of the basic resources of soil, plants, and water. If an adequate perennial plant community is in place at the time of burning the normal succession process should allow for natural recovery. When a sufficient understory is lacking there will usually be a need for seeding.

The establishment of a perennial community is essential for preventing the establishment of exotic annual weeds. It is critical that seeding be completed within the window of opportunity or annuals will likely dominate the site and fire frequency and intensity will be drastically altered. It is imperative that primary weeds, like cheatgrass and other secondary weeds not invade and cause further site degradation.

ISSUE #2 - Knowledge and Experience

The RAC Subgroup was asked to evaluate whether the BLM employees on-the-ground had the knowledge and experience necessary to be given, or to continue, the task of rehabilitating burned areas.

ANALYSIS

It is recognized that fire management expertise can be spread very thin during catastrophic fires such as those experienced in 1996, so additional and upgraded training and certification of reclamation specialists should be a top priority.

It was suggested that University programs may have become overzealous in teaching range management philosophy and are not effectively teaching the practical aspects of soil, water, plant, and animal management. Emphasis should be placed on experience and practical knowledge, as well as, the dissemination of information.

Some BLM managers, especially those in areas which experience frequent fires, have the knowledge and experience to conduct effective rehabilitation projects. Others may lack experience (in areas where fire is not frequent), or not be current in plant material availability, agronomic practices and the use of animals to manipulate vegetation. These basic skills are not as prevalent in the land management agencies, or society in general, as they once were. The Subgroup suggests that deficiencies in these areas could easily result in a lack of public confidence and support. Also there is concern that political correctness and special interest pressure may be substituted for proper resource management decisions.

The Subgroup recommends that a core of specialists receive regular training in the area of plant species selection which includes adaptations to specific sites, seed characteristics, etc., of native and exotic species. There should also be a greater understanding of methods of seeding, seedbed ecology, site preparation and seeding equipment, ecological site delineation, range improvement techniques and equipment, and GIS mapping. BLM should develop or support training and certification to help develop, inspect, direct, approve and monitor restoration projects.

Considerable knowledge is available on individual plant communities, and species. This current information should be assembled and made available to land managers. At least one subgroup member felt this information is poorly assembled and not updated, and managers fail to use what data is available.

A contract has been awarded to Utah State University to gather data relative to fire rehabilitation.

Results of this effort will be distributed to all employees involved in the Emergency Fire Rehabilitation program. See the folio database on Fire Effects on Rangelands in the Great Basin and Colorado Plateau Regions of Utah: An Annotated Bibliography.

A national BLM Fire Rehabilitation Workshop was held in Salt Lake City on October 21-23, 1997. Agenda items included: update of VEGSPEC rehabilitation database; effects of fire & rehabilitation on microbiotic crust; modifications of the rangeland drill to improve seed distribution; seeding equipment availability & ordering; seed requirements & ordering through the regional seed warehouse; rehabilitation studies on Colorado fires; aerial seeding & chaining/harrowing on the Foothills Fire, Idaho; rehabilitation monitoring needs, strategies and status; contracting; Utah large scale wildfire & rehabilitation problems, successes and failures; weed invasion and treatment following wildfire; use of the herbicide 'Oust' before seeding; new technologies for rehabilitation; Wyoming sagebrush reseeding; forage Kochia; EFR handbook presentation on changes; and Clean Water Act compliance. A panel discussed: Native Versus Non-Native species in EFR Program (panel representatives from research, conservation group, livestock industry, academia, land management agency, etc.).

The Subgroup found that BLM is currently updating fire restoration procedures, direction and guidelines. Fire management will be included in the land use planning process prior to burning.

SUBGROUP RECOMMENDATIONS

The Subgroup recommends that funding and resources should be provided to better evaluate and monitor rehabilitation projects. BLM direction has recently been changed to allow funding for monitoring rehabilitated areas for up to three years and be charged to the approved rehabilitation plan.

Expertise in rehabilitation is often spread thin, so it is necessary to provide additional upgraded training and certification. Emphasis should be placed on practical knowledge and experience. There is a need for regular training in the selection of plant species adapted to specific sites, methods of seeding, ecological site evaluations, etc.

Current information should be assembled, updated and made available to field personnel. Managers should be encouraged to attend symposia and workshops specifically related to this subject.

Fire management should be included in the land use planning process and monitoring should be a major part of rehabilitation plans.

ISSUE #3 - Methodology

The Subgroup was asked to consider if BLM is using the best science available when rehabilitating areas burned by wildfires. Different treatment methods were evaluated at several sites.

ANALYSIS

Rehabilitation following wildfires may involve the following: using seed mixtures adapted to the site; drilling seed; broadcasting seed from aircraft without covering it; broadcasting seed followed by dragging a chain to cover the seed; construction of waterbars to reduce erosion; fencing, to keep livestock off rehabilitated areas until plants have established; and, monitoring to evaluate successes or failures.

Seeds of all species require specific seedbed conditions in order to germinate and develop healthy seedlings. Seeds of most species must be covered in order to be adequately stratified, break dormancy, support germination and assure seedling establishment.

Drilling seed

The standard rangeland drill that has been used for the past 50 years has not been upgraded with features that are available on some newer models used in agriculture. Some newer drills have separate seed boxes that are equipped with depth control devices that can be adjusted to the desired seeding rate and depth for each species used. Although such seed drills are available, they are expensive and are not generally in circulation. Upgrading of equipment is expensive and will require special emphasis from management and research agencies. Since newer drills are not available, BLMers feel fortunate to have access to the old drills when a project is done.

Drilling seed has been found to be highly effective when soil, slope, and obstacles are not limiting.

Broadcast seeding, without covering the seed

Few species can establish if placed and left uncovered on arid or semi-arid soils that dry quickly and do not remain moist for extended periods. Visits to sites that were aerial seeded, without any seed coverage, confirmed that this practice was not acceptable on these soils and where soil erosion is a factor. Very little of the uncovered seed had germinated, and what did germinate was not sufficient to protect the soil. The Subgroup found that it is not advisable to broadcast seeds upon the soil surface without some means of covering the seeds. On the other hand, great care should be taken to assure that seed is not placed too deep in the soil. Most grass seed should not be planted deeper than ½ inch.

Broadcast seed, followed by covering the seed

It was found that dragging a chain over the burned and seeded area adequately covers seed. Using a chain to cover the seed allows for surface tillage to be easily regulated. This can be accomplished by using different sized chains, use and positioning of swivels, operational speed, configuration of the chain or using a modified chain such as the "Ely" chain or "Dixie" sager. This treatment is especially useful on harsh, steep slopes where seedling establishment is critical to prevent erosion.

This method has versatility for varying surface tillage by: using different sizes of chains; the use and positioning of swivels; varying operation speed and chain configuration; and, using a smooth, "Ely" chain, or "Dixie sager."

A distinction must be made between the chaining of live trees and covering seed on areas where trees and shrubs have been killed by fire.

Broadcast seeding uses a higher rate of seed, so there is a better chance that each species will find its ultimate niche. Most members of the Subgroup found that rolling a chain over the seed, created adequate seedbeds for mixtures of seed. And they concluded that covering the seed in this manner may be the only method that can achieve the objectives in a cost effective and practical manner when vast acreages are to be seeded. There are many areas of BLM administered land that is too rough or too steep for drilling. An invited Scientist who adamantly opposes chaining of live trees, agreed that covering the seed with a chain is an acceptable and effective method of rehabilitation where trees and shrubs have been killed by fire.

Alternative treatments

One alternative treatment suggested to BLM is hand cutting of trees and distributing tree limbs on the soil surface. Cutting dead or burned tree skeletons is very labor intensive and placing these on the soil surface does not provide an adequate seedbed and does not cover the seeds. The Subgroup felt this practice has limited application.

Another suggested alternative treatment is using livestock to trample the seed into the ground. While this may be effective in small areas, the disadvantages discussed include: the size of the burned area needing treatment; availability and control of the livestock; lack of food available for the livestock on the burned sites; and the ash turning the animals (wool) black. This was discussed among various groups, but not included in the written response to the 20 questions.

SUBGROUP RECOMMENDATIONS

Rehabilitation of wildfires should include: the use of suitable seed mixtures; drilling seed; broadcasting seed without covering it; broadcasting seed and dragging a chain to cover the seed; construction of erosion control structures; fencing for managing livestock; and monitoring.

BLM should purchase and have available the state of the art range drills. These new models provide separate seed boxes for a variety of plant seed. Control of dispersal rates and depth of planting are advantages of this new equipment.

Seeds of most species must be covered in order to assure establishment. Dragging a chain over burned and seeded areas is a suitable technique for covering seed. Chains are useful on rocky soils, harsh or steep slopes where plant establishment is critical for controlling erosion. Using the chain can achieve the objectives in a cost effective and practical manner when large acreages are to be rehabilitated. Alternative methods to using a chain are often too labor intensive, expensive or impractical for a variety of reasons.

ISSUE #4 - Native Verses Non-native Seed

The use of and distinction between native and non-native species is currently a very contentious issue.

Therefore it was addressed by the Subgroup.

ANALYSIS

The main objective of fire rehabilitation is to establish an ecologically sound and functioning perennial plant community. It is therefore important to choose species for their ease of establishment, seedling vigor, and persistence. Emphasis should be placed on plant materials that are best adapted and capable of protecting the basic soil resource.

Considering the established presence of non-natives such as cheatgrass and State listed noxious weeds, keeping a site "natural" seems to be a moot point. Subgroup members pointed out that many dryland and irrigated species currently grown in North America have been introduced from foreign countries in the last one hundred and fifty years.

As a general rule, areas of higher moisture and elevation, deep soils, moderate conditions, and conservative grazing use, respond well to seeding native species. Arid, harsh sites common to BLM lands impacted by heavy domestic and wild animal use, weed invasion and other disturbances may not respond favorably to seeding natives. There are introduced species, and cultivars developed by the USDA Agricultural Research Service and Universities, that are vigorous and establish good stands on harsh sites. Native species that establish well at higher latitudes may not be as successful at our southern latitudes.

The Subgroup suggests that BLM, in cooperation with the seed industry, aggressively adopt a program to develop, produce and use native species on sites where they are adapted and can be expected to thrive. After identifying key native species, seed collectors and marketing companies should be encouraged to produce the seed.

Until more native seed becomes available BLM should use a mixture of native and introduced species. The introduced species can act as a nurse crop, holding the soil in place, and controlling weed invasion, until the native species can again become established.

BLM maintains a seed warehouse in Boise where seed is prepurchased and stock-piled each year before the fire season. In a "normal" fire year, this seed is usually adequate for most of Utah's seed needs. In 1996 large quantities of additional seed were needed, so it was necessary to go out for bids. Adequate amounts of native seed were not available and substitutions had to be made.

The Subgroup recognizes that cost should be a consideration in the selection of plant materials, especially if there is a trade off between total acres treated versus a highly expensive native seed mix.

At higher elevations with more precipitation, deeper, better developed soils, and other more desirable conditions, native species respond well. Arid, harsh sites typical of BLM lands with

heavy ungulate use, weed invasion or other disturbances may not be as suitable for native species. On the other hand, selected species and cultivars establish on these harsh sites. Also, native species that establish well at northern latitudes may not be as successful as southern latitudes.

SUBGROUP RECOMMENDATIONS

The major concern must be to maintain ecologically functioning perennial plant communities. Seeded species should be selected for ease of establishment, seedling vigor and persistence in the community. Emphasis should be placed on those plants that are best suited for the site in question. Species selection must be made at the local level by qualified personnel on a site specific basis.

A pre-inventory of expected needs and a proactive program of encouraging the collection and storage of native seed should result in quantities adequate for a "normal" fire year at reasonable cost.

Guideline #5 of Utah's Standards for Rangeland Health and Guidelines for Grazing Management (May1997) addresses this issue and states, "The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species."

ISSUE #5 - Cultural Resource Inventories

In accordance with the requirements of Section 106 of the National Historic Preservation Act of 1966 (NHPA), federal agencies must make a reasonable and good faith effort to identify any cultural resources which may be subject to impact from the proposed action and which may be eligible for inclusion on the National Register of Historic Places. The potential impact of the proposed action must be considered by the federal agency official prior to making a decision which could impact those resources. Given the limited windows of opportunity to conduct effective fire rehabilitation efforts, cultural inventories must be compressed into a very short time frame: after the fires are extinguished but prior to rehabilitation. What opportunities exist to streamline the inventory process?

ANALYSIS

As a direct result of the 1996 wildfire season, considerable informal discussion and debate has occurred around the nation on this subject. Formal discussion of this issue has resulted in recommendations from the Utah Professional Archaeological Council, Mr. Mark Stuart representing the Utah Resource Advisory Council, and others. While the several recommendations vary in detail, there seems to be consensus that opportunities to streamline exist in two major areas:

1) Field methodologies should be streamlined to allow more efficient utilization of staff resources, whether these are in-house personnel, volunteers, or contractors. Location, external site boundaries, and a brief characterization of the resource should be emphasized.

2) There has also been discussion concerning the use of available human resources - including volunteers and contractors. All of these choices have benefits and drawbacks based on start-up time, cost, and availability. Use of each or all should be considered on a case-by-case basis. Relatively small acreages proposed for rehabilitation can be inventoried using in-house personnel and well trained volunteers. As fire size increases, or as the number of fires subject to rehabilitation increases, BLM should increasingly rely on contract efforts. Start-up time for contract work can be minimized by preparation of basic contract packages prior to the fire season.

It is important to reiterate that while there is no legal or regulatory definition of an adequate inventory, the NHPA anticipates that inventory will be sufficient to locate properties that may be eligible for inclusion on the National Register. BLM policy is to conduct Class III, 100% inventory where circumstances suggest that complete physical inventory is needed to locate all eligible properties. As an inventory database emerges through time, it may be possible to determine that certain areas, usually defined by landform or environmental conditions, exhibit a paucity of eligible properties; once these areas are identified, inventory standards may either be reduced or waived in consultation with the State Historic Preservation Officer (SHPO). Sampling, or Class II probabilistic inventory, may be appropriate in limited circumstances.

SUBGROUP RECOMMENDATIONS

A reasonable and good faith effort must be made to identify any cultural resources that may be impacted by the proposed action and which may be eligible for inclusion on the National Register of Historic Places. The potential impact of fire rehabilitation must be considered.

Field methodologies should be streamlined. Location, external site boundaries, and a brief characterization should be emphasized.

The use of all available human resources provides choices that have benefits and drawbacks. Use of each should be considered on a case-by-case basis. Small acreages can be handled with in-house personnel and qualified volunteers. On large fires, BLM should rely on contract efforts. More reliance should be made on pre-fire contract packages.

It may be possible to determine that certain areas, usually defined by landform or environmental condition, exhibit a paucity of eligible properties. Once these areas are identified, inventory standards may be reduced or waived.

Sampling, or class II probabilistic inventory, may be appropriate in limited circumstances.

ISSUE #6 - Cultural Resource Significance

Significance of archaeological and historical resources found on the public lands subject to fire

rehabilitation efforts has been the focal point of considerable debate and discussion. What constitutes significance? While this is clearly an important issue, it must be understood that for the purposes of agency compliance with Section 106 of the National Historic Preservation Act, certain legal definitions exist and must be employed.

In the context of the NHPA, a cultural resource or site or property has significance if it is eligible for inclusion on the National Register, and by definition a significant site is eligible for inclusion on the National Register. For our purposes, the two terms, eligible and significant, are interchangeable. The National Register criteria for evaluation are reproduced below from federal regulations at 36 CAR Part 60.4:

"The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Prior to authorizing an action which may result in an effect to any cultural resource, the criteria for evaluation must be applied to all of the resources located during the identification (inventory) stage of work. At a minimum, determinations of eligibility for inclusion on the National Register must be reached in consultation between the federal agency and the State Historic Preservation Officer. In the event of disagreement between the parties to consultation, formal determinations may be deferred to the Keeper of the Register in Washington, DC. A great deal of effort is required to complete this consultation

process. A narrative report describing the inventories and the results of the inventories must be prepared; a formal site record must be prepared, with detailed information, for each cultural resource site located during the inventory. The criteria for evaluation must be applied to each resource, discussed in the report, with the agency determinations for eligibility. As a rule of thumb, it takes at least as many days to write this type of report as it does to complete the physical inventory.

It is important to note that cultural efforts conducted after the 1995 and 1996 wildfire seasons on BLM lands in Utah were streamlined considerably. To avoid a protracted effort to prepare reports and site eligibility evaluations on hundreds of sites, BLM and SHPO agreed to a flag-and-avoid procedure. Sites were recorded in the field and flagged for avoidance. As soon as the physical inventories were completed, authorization to commence rehabilitation work (drill seeding or chaining) was issued; reports describing the inventories were to be submitted at a later

date. It was necessary to avoid all of the cultural sites, since there was no time for consultation with SHPO on eligibility.

Avoidance (flagging) procedures present another problem which has yet to be resolved. As has been discussed at some length, flagging also serves to identify the sites for possible vandalism. Another drawback to avoidance procedures is the simple fact that avoided sites are not effectively re-seeded; these sites may develop cheat grass and other noxious weeds, and may be more prone to surface erosion, and these sites become obvious because of the cheatgrass. Anecdotal information available from the 1996-97 rehabilitation efforts suggests that in some areas, at least, erosion of archaeological sites in avoidance areas has resulted in site damage.

One option would be to pursue chaining and/or drilling over as many sites as possible to limit the acreage available to cheat grass, to minimize the number of sites exposed to erosion, and to minimize the exposure of sites to vandalism. Archaeologists are not uniform in their views, however, and an opposing viewpoint exists which suggests that rehabilitation areas should be minimized to the extent possible, that larger areas should be in avoidance zones where the sites would blend in to the surroundings and not be keyed out by close flagging. Some individuals argue that chaining and drill seeding are not necessary and that the burned areas will recover with no seed bed preparation or soil cover. These factions argue that the rehabilitation efforts cause more damage to the environment, and an unjustifiable threat to the cultural resources.

There are no easy answers. Recommendations from BLM professional staff, the Utah Professional Archaeological Council, Mr. Mark Stuart of the Resource Advisory Council and others have suggested that additional efficiencies could be gained by investing in research to determine in advance what types of cultural sites might be considered eligible, and which ineligible, for inclusion on the National Register. If a series of clear, well understood thresholds for eligibility could be defined for a region or series of regions subject to wildfire, it might be possible to develop an agreement where field crews would be able to assess eligibility in the field, and to determine which sites should be protected. In turn, fewer avoidance areas on any rehabilitation project would increase the acreage available for re-seeding, and reduce the human efforts necessary to assure site avoidance, reduce erosion on sites, etcetera.

An additional benefit to accrue from research into eligibility issues would be the opportunity to apply the best available science in a careful, thoughtful manner. Resource management decisions which balance the needs of cultural resource protection and preservation against the needs of natural resource conservation could be given more consideration, before the fire season and not as a result of the fire season.

Avoidance (flagging) procedures present problems because it serves to identify sites for possible vandalism. Avoided sites are not effectively seeded, and the sites may revert to noxious weeds and be more prone to erosion.

One option is to pursue chaining and/or drilling over as many sites as possible to limit the acreage susceptible to cheatgrass and minimize erosion and exposure to vandalism.

Another option is to minimize rehabilitation areas so that sites would blend into the surroundings and not be made obvious by flagging.

SUBGROUP RECOMMENDATIONS

Legally, a cultural resource or site or property has significance if it is eligible for inclusion on the National Register. At a minimum, determination of eligibility must be reached in consultation between the federal agency and SHPO. A narrative report must be prepared, and a site record must be prepared for each resource.

Efficiencies could be gained by determining in advance what cultural sites might be considered eligible. This process will help balance the needs of cultural resource protection and preservation against the needs of natural resource conservation.

ISSUE #7 - Native American Coordination and Consultation

Despite BLM efforts to coordinate and/or consult with the appropriate Indian tribes in September and October of 1996, serious Native American concerns surfaced in spring of 1997, with a major effect on the outcome of the BLM rehabilitation effort. What is the role of the Native American people as regards undertakings, or proposed actions, on public lands?

ANALYSIS

Several laws provide clear statutory guidance in this area. The National Environmental Policy Act of 1969 (NEPA), the Federal Land Policy Management Act of 1976 (FLPMA), the American Indian Religious Freedom Act of 1978 (AIRFA), and the National Historic Preservation Act of 1966 (as amended, NHPA) in concert require BLM to coordinate and to consult with tribes on the full range of land management activities from developing land use plans, through the environmental analysis process, up to and including the land-use decision making process, to determine whether or not agency actions will impact tribal values, religion, culture and or other interests.

Prior to making a decision which may affect tribal interests, BLM has an obligation to contact tribes, coordinate with tribes, and to consult with tribes where appropriate, on the nature and potential impacts of proposed actions, and to consider tribal input, views, and concerns in the decision making process. Additionally, the relationship of the United States government to sovereign Indian tribes is a government-to-government relationship which requires exercise of due respect to the needs of each tribe as regards their form of government and communication needs.

Coordination and consultation with tribal entities is often a time consuming process; the process takes longer when matters of cultural importance are being considered by the tribe(s). Federal agencies like BLM occasionally are pressed to act quickly to resolve resource conflicts, as with the emergency fire rehabilitation actions. Moving quickly to issue a decision on any subject of deep concern to tribal interests, without taking tribal concerns into account, will lead to miscommunication, confusion, and conflict.

Establishing and maintaining a government-to-government relationship based on credibility and trust is the first step in assuring that an appropriate role is available to the Native American community. The nature of the role that tribal entities and Native American people will exercise must be defined by the tribes and by the concerned individuals. The agency obligation is to communicate, coordinate, and to consult in good faith. As an example, it may be appropriate for tribal members to participate with BLM in a wide range of activities, where appropriate and at the discretion of the tribe. Conversely, the tribe(s) may choose not to participate. There are various avenues for improving relationships with tribes and for making the coordination/consultation process more effective and positive. BLM should learn more about tribal concerns, beliefs, and needs, and how those tribal interests are affected by BLM land management. All answers revolve around better communication.

SUBGROUP RECOMMENDATIONS

MOUs and cooperative agreements could be developed to anticipate resource activities, including emergency fire rehabilitation. BLM is legally mandated to coordinate and consult with Native Americans, on the full range of land management activities, to determine whether or not agency actions will impact tribal values, religion, culture, and/or other interests.

BLM must contact, coordinate and consult with tribes on the nature and potential impacts of proposed actions and consider tribal input, views, and concerns. This government-to-government relationship requires exercise of due respect to the needs of each tribe and must be based on credibility and trust. BLM should learn more about tribal concerns, beliefs, needs, and how tribal interests are affected by land management decisions.

ISSUE #8 - Treatment of Cultural Resources

There has been discussion on the appropriate treatment of cultural resources once discovered, in effect, should sites be avoided, should they be seeded, chained or drilled to prevent erosion, and should some sites be treated differently than others?

ANALYSIS

There is no easy answer to this question or questions. Studies are underway by BLM to determine if sites are more likely to be damaged by rehabilitation efforts or by the natural erosional processes or vandalism on sites that ensues where re-seeding is not conducted aggressively. The answers may vary by site type and by soil type, slope, and other factors.

Determinations on how to treat an archaeological or historic site are made by the agency in consultation with SHPO in most circumstances, and in consultation with the President's Advisory Council on Historic Preservation, where appropriate. Interested parties, Indian tribes, and others may participate in this consultation process, but the consultation does not begin until a project or class of projects has been identified.

All options should be considered, once an appropriate level of defensible data has been acquired.

SUBGROUP RECOMMENDATIONS

Studies should continue that will determine if sites are more likely to be damaged by rehabilitation procedures or by the natural erosional process and vandalism on sites where re-seeding is not aggressively conducted. These studies should take into account soil type, slope, and other factors.

Determinations on how to treat an archaeological or historical site should be made by BLM in consultation with SHPO, the President's Advisory Council, interested parties and Indian tribes.

State Director's Response

Fire Rehab Email lmacдона@ut.blm.gov

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